

REMARKS

Claims 1-7, 9-12, 21 and 22 have been cancelled. Previously presented claims 8, 13-20 and 23 remain in the case. Claims 24-35 have been added.

Applicants respectfully traverse the rejections of claims 8, 13, 20 and 23 as unpatentable over Hoshino et al 5,531,261 in view of Stoyhoff US 2003/0075307 A1, and as unpatentable over Hoshino et al 5,531,268 in view of Martins et al 6,502,305. The rejections are based upon an impermissible proposed modification to Hoshino et al.

More specifically, a review of the specification of Hoshino et al reveals that the entire focus of its disclosure is the provision of a heat exchanger structure that can be assembled with flattened, unbent tubes extending between its headers 5 and 6 with fins 11 and 12 assembled between the tubes and then folded as an assembly to form a final structure having parallel leg portions 2 and 3 joined by a bent portion 4. The modification proposed in each of the above recited rejections would completely change the principal of operation of Hoshino et al because the heat exchanger could no longer be assembled flat and then folded if it were modified to include fins that extend across both of the legs. Rather, each of the tubes would have to be folded first, individually, and then the fins and tubes assembled together with the tubes in their folded state rather than in their unfolded state. This clearly is contrary to the entire focus and principal of operation of Hoshino et al's disclosure. This is not

allowed when making a §103 rejection. See MPEP §2143.01 stating that "THE PROPOSED MODIFICATION CANNOT CHANGE THE PRINCIPAL OPERATION OF A REFERENCE". Furthermore, because the purpose of Hoshino et al is to provide a construction that can be folded in half after its fins and tubes are assembled together, the proposed modification would render Hoshino et al unsatisfactory for its intended purpose. This also is not allowed. See MPEP §2143.01 stating that "THE PROPOSED MODIFICATION CANNOT RENDER THE PRIOR ART UNSATISFACTORY FOR ITS INTENDED PURPOSE." For each of these reasons alone, each of the above-identified rejections is improper, fails to establish a *prima facie* case of obviousness, and should be withdrawn.

Furthermore, again discussing both of the above-identified rejections based on modifications of Hoshino et al, the rationale presented in the rejections in support of the modification is that the fins would be added to minimize heat conduction and facilitate assembly. However, contrary to this assertion, the substitution of fins that extend across each of the parallel legs 2, 3 of Hoshino et al would not facilitate assembly because it would prevent the simultaneous bending of all of the tubes 1 of Hoshino et al as discussed above, thereby complicating the assembly rather than facilitating the assembly. Further, it cannot seriously be argued that fins extending across both of the parallel legs 2, 3 of Hoshino et al would minimize heat conduction better than the completely separate fins 11 and 12 already

disclosed for use in Hoshino et al. Rather, the proposed modification would result in greater heat conduction in comparison to the separate fins 11 and 12 already disclosed for use in Hoshino et al. Accordingly, the rationales presented for the rejection are not only unsupportable, but actually would lead one skilled in the art away from the proposed modification. For each of these additional reasons alone, each of the above-identified rejections based on Hoshino et al is improper, fails to establish a *prima facie* case of obviousness, and should be withdrawn.

Further, an additional rationale was provided for the modification of Hoshino et al with Martins et al by the assertion that it would "make the heat exchanger more compact". However, there is nothing in either Hoshino et al or Martins et al that supports the conclusion that the fin of Martins et al would result in a more compact construction for Hoshino et al. Indeed, a review of Figs. 2, 3, 5 and 6 of Hoshino et al indicates that the limiting factor on the front to back width of the heat exchanger is the available bend radius of the bend 4, rather than the spacing between the fins 11 and 12. Accordingly, this additional rationale for the modification of Hoshino and Martins is not supportable. For this additional reason, the rejection is improper and should be withdrawn.

Applicants respectfully traverse the rejection of claims 13 and 20 as unpatentable over Waldorf 4,688,394 in view of Martins et al 6,502,305. The

rejection is based upon mischaracterizations of the disclosures of both Martins et al and Waldorf.

More specifically, the rejection mischaracterizes the waste heat source 26 (a radiator in an automobile) and the external heat exchanger 15 of Waldorf as a single gas cooler (15,26) for receiving compressed refrigerant from a compressor in a cooling mode, when it is only the outboard heat exchanger 15 that receives refrigerant, not the radiator 26. This is critical because claims 13 and 20 call for a gas cooler including "a plurality of spaced rows of flattened tubes from front to back and defining aligned tube runs in each row," which is clearly not shown in Waldorf. A similar mischaracterization of Martins et al is made by asserting that the radiator 1 and condenser 2 of Martins et al are "a heat exchange module (1,2)". In this regard, it should be noted that the rejected claims do not recite a "heat exchanger module", but rather recite "a gas cooler for receiving compressed refrigerant" with the gas cooler including a heat exchanger having "a plurality of spaced rows of flattened tubes from front to back and defining aligned tube runs in each row". Accordingly, Waldorf and Martins et al taken alone or together fail to show or suggest the structure recited in claims 13 and 20. Accordingly, for this reason alone, the rejection of claims 13 and 20 should be withdrawn.

Additionally, the rejection of claims 13 and 20 based on Waldorf and Martins et al is based on an improper modification of Waldorf. More specifically, the

rejection would render Waldorf unsuitable for its intended purpose because, as asserted in the rejection, the modification by Martins et al is intended to minimize the heat transfer between various heat exchange regions of the fin. This is completely contrary to the teachings and purpose of Waldorf which is to encourage heat transfer between the waste heat source 26 and the heat exchanger 15, as expressly described in column 3, line 24 - column 4, line 8 and column 5, lines 40-48. Accordingly, one skilled in the art would not modify Waldorf with Martins as suggested in the Office Action to minimize the transfer of heat from the waste heat source 26 to the heat exchanger 15, which would defeat the very purpose of the structure shown in Waldorf. This is not allowed when making a §103 rejection. Accordingly, for this additional reason, the rejection of claims 13 and 20 based on Waldorf and Martins et al is improper, fails to establish a *prima facie* case of obviousness, and should be withdrawn.

Claims 24-29 have been added to depend from base claim 8 which is believed to be allowable and which is generic to all the species identified in the Office Action dated March 21, 2003 (Paper No. 5). Claims 24-29 are based upon original claims 2-7, respectively, but depend from claim 8 rather than claim 1. Similarly, claims 30-35 have been added to depend from claim 23, which is generic to all of the species identified in Paper No. 5. Claims 30-35 are based upon original claims 2-7, respectively, but depend from claim 23 rather than claim 1. Because claims 8 and 23


are respectfully submitted to be allowable, it is believed that added claims 24-35 should be considered and are allowable.

In view of the foregoing, Applicants respectfully request reconsideration of the rejections of claims 8, 13, 20 and 23, consideration of new claims 24-35 in view of the believed allowability of claims 8 and 23, and consideration of withdrawn claims 14-19 in view of the believed allowability of claim 13.

Respectfully submitted,

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